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## Aspergillosis

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Aspergillosis is an infection, growth, or allergic response due to the *Aspergillus* fungus.

### Causes

Aspergillosis is caused by a fungus (*Aspergillus*), which is commonly found growing on dead leaves, stored grain, compost piles, or in other decaying vegetation. It can also be found on marijuana.

Although most people are frequently exposed to aspergillus, infections caused by the fungus rarely occur in people with a normal immune system. The rare infections caused by aspergillus include pneumonia and fungus ball (aspergilloma).

There are several forms of aspergillosis:

- Pulmonary aspergillosis - allergic bronchopulmonary type -- is an allergic reaction to the fungus that usually develops in people who already have lung problems (such as asthma or cystic fibrosis).
- Aspergilloma -- is a growth (fungus ball) that develops in an area of previous lung disease or lung scarring (such as tuberculosis or lung abscess).
- Pulmonary aspergillosis - invasive type -- is a serious infection with pneumonia that can spread to other parts of the body. This infection occurs almost exclusively in people with weakened immune systems due to cancer, AIDS, leukemia, organ transplantation, chemotherapy, or other conditions or medications that lower the number of normal white blood cells or weaken the immune system.

### Symptoms

Symptoms depend on the type of infection. For symptoms of aspergillosis-related growth, see aspergilloma.

Symptoms of allergic bronchopulmonary aspergillosis may include:

- Cough
- Coughing up blood or brownish mucous plugs
- Fever
- Generalized ill feeling (malaise)
- Wheezing
- Weight loss
- Recurrent episodes of lung airway obstruction

Additional symptoms seen in invasive aspergillosis depend on the part of the body affected, and may include:

- Bone pain
- Blood in the urine
- Chest pain
- Chills
- Decreased urine output
- Endocarditis
- Headaches
- Increased sputum production, which may be bloody
- Meningitis
- Shortness of breath
- Sinusitis
- Skin sores (lesions)
- Vision problems

## Exams and Tests

Tests to diagnose *Aspergillus* infection include:

- Aspergillosis antibody test
- Chest x-ray
- Complete blood count
- CT scan
- Galactomannan (a molecule derived from the fungus, which is sometimes found in the blood)
- Sputum stain and culture for *Aspergillus*
- Tissue biopsy (see bronchoscopy with transtracheal biopsy)

## Treatment

A fungus ball is usually not treated (with antifungal medicines) unless there is bleeding into the lung tissue. In that case, surgery is required.

Invasive aspergillosis is treated with several weeks of an antifungal drug called voriconazole. It can be given orally or in an IV (directly into a vein). Amphotericin B, eichinocandins, or itraconazole can also be used.

Endocarditis caused by *Aspergillus* is treated by surgically removing the infected heart valves. Long-term amphotericin B therapy is also needed.

Antifungal drugs do not help people with allergic aspergillosis. Allergic aspergillosis is treated with immunosuppressive drugs -- most often prednisone taken by mouth.

## Outlook (Prognosis)

People with allergic aspergillosis usually get better gradually, with treatment. It is common for the disease to come back (relapse) and need repeat treatment.

If invasive aspergillosis does not get better with drug treatment, it eventually leads to death. What happens to a person with invasive aspergillosis also depends on the underlying disease and immune system function.

## Possible Complications

- Amphotericin B can cause kidney impairment and unpleasant side effects such as fever and chills
- Bronchiectasis (permanent scarring of the small sacs in the lungs)
- Invasive lung disease can cause massive bleeding from the lung
- Mucous plugs
- Permanent airway obstruction
- Respiratory failure

## When to Contact a Medical Professional

Call your health care provider if you develop symptoms of aspergillosis or if you have a weakened immune system and develop a fever.

## Prevention

Be careful when using medications that suppress the immune system. Prevention of AIDS prevents certain diseases, including aspergillosis, that are associated with a damaged or weakened immune system.

## References

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